

Serial No.: 09/525,361
Filed: March 15, 2000



A48
- 23. A peptide consisting essentially of BCH1p1 (SEQ ID NO:26). -

A49
Please replace Claim 25 with the following rewritten claim:

- 25. A peptide consisting essentially of BCH1p2 (SEQ ID NO:27). -

REMARKS

Attached hereto is a marked-up version of the changes made to the specification and claims by the current amendment. The attached page is captioned "Version with markings to show changes made."

These amendments are made in adherence with 37 C.F.R. § 1.821-1.825. This amendment is accompanied by a floppy disc containing the above named sequence, SEQUENCE ID NUMBERS 1-53, in computer readable form, and a paper copy of the sequence information. The computer readable sequence listing was prepared through use of the software program "Patent-In" provided by the PTO. The information contained in the computer readable disc is identical to that of the paper copy. This amendment contains no new matter. Applicant submits that this amendment, the accompanying computer readable sequence listing, and the paper copy thereof serve to place this application in a condition of adherence to the rules 37 C.F.R. § 1.821-1.825.

Please direct any calls in connection with this application to the undersigned at (415) 781-1989.

Respectfully submitted,

FLEHR HOHBACH TEST
ALBRITTON & HERBERT LLP

Dated: April 11, 2001
Four Embarcadero Center, Suite 3400
San Francisco, CA 94111-4187
Telephone: (415) 781-1989

James J. Diehl
James J. Diehl
Reg. No. 47,527



VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE SPECIFICATION:

Paragraph beginning at page 7, line 21 has been amended as follows:

– Figure 13 (SEQ ID NO:1) shows an embodiment of a nucleic acid (mRNA) which includes a sequence which encodes a breast cancer protein provided herein, BCR3. The start and stop codons are underlined. –

Paragraph beginning at page 7, line 23, has been amended as follows:

– Figure 14 (SEQ ID NO:2) shows an embodiment of an open reading frame of a nucleic acid encoding BCR3, wherein the start and stop codons are underlined. –

Paragraph beginning at page 8, line 1, has been amended as follows:

– Figure 15 (SEQ ID NO:3) shows an embodiment of an amino acid sequence of BCR3. The signal peptide is underlined and the transmembrane domain is shaded. In a preferred embodiment, a soluble form of BCR3 is provided wherein the signal peptide is deleted or preferably naturally cleaved, and the transmembrane domain is deleted, inactivated, or BCR3 is truncated to exclude the transmembrane domain. –

Paragraph beginning at page 8, line 6, has been amended as follows:

– Figure 16 shows the amino acid sequence of BCR3p1 (SEQ ID NO:4) and BCR3p2 (SEQ ID NO:5). –

Paragraph beginning at page 8, line 9, has been amended as follows:

– Figure 18 (SEQ ID NO:6) shows an embodiment of a nucleic acid (mRNA) which includes a sequence which encodes a breast cancer protein provided herein, BCQ8. The start and stop codon are underlined. –

Paragraph beginning at page 8, line 11, has been amended as follows:

Serial No.: 09/525,361

Filed: March 15, 2000

– Figure 19 (SEQ ID NO:7) shows an embodiment of an open reading frame of a nucleic acid encoding BCQ8, wherein the start and stop codons are underlined. –

Paragraph beginning at page 8, line 13, has been amended as follows:

– Figure 20 (SEQ ID NO:8) shows an embodiment of an amino acid sequence of BCQ8. The signal peptide is underlined twice and the transmembrane domain is underlined. In a preferred embodiment, a soluble form of BCQ8 is provided wherein the signal peptide is deleted, and the transmembrane domain is deleted, inactivated, or BCQ8 is truncated on either end as desired, to exclude the transmembrane domain. –

Paragraph beginning at page 8, line 18, has been amended as follows:

– Figure 21 shows the amino acid sequence of BCQ8p1 (SEQ ID NO:9) and BCQ8p2 (SEQ ID NO:10). –

Paragraph beginning at page 8, line 21, has been amended as follows:

– Figure 23 (SEQ ID NO:11) shows an embodiment of a nucleic acid (mRNA) which includes a sequence which encodes a differentially expressed protein provided herein, human BCQ5. –

Paragraph beginning at page 8, line 23, has been amended as follows:

– Figure 24 (SEQ ID NO:12) shows an embodiment of an open reading frame of a nucleic acid encoding human BCQ5. –

Paragraph beginning at page 9, line 1, has been amended as follows:

– Figure 25 shows embodiments of amino acid sequences of BCQ5 by providing an alignment wherein human (SEQ ID NO:13) is above mouse (SEQ ID NO:14) which is above rat (SEQ ID NO:15). –

Paragraph beginning at page 9, line 3, has been amended as follows:

– Figure 26 shows the amino acid sequence of BCQ5p1 (SEQ ID NO:16), BCQ5p2 (SEQ ID NO:17) and BCQ5p3 (SEQ ID NO:18). –

Serial No.: 09/525,361

Filed: March 15, 2000

Paragraph beginning at page 9, line 7, has been amended as follows:

– Figure 28 (SEQ ID NO:19) shows an embodiment of a nucleic acid (mRNA) which includes a sequence which encodes a differentially expressed protein provided herein, mouse BCQ5. –

Paragraph beginning at page 9, line 9, has been amended as follows:

– Figure 29 (SEQ ID NO:20) shows an embodiment of an open reading frame of a nucleic acid encoding mouse BCQ5. –

Paragraph beginning at page 9, line 10, has been amended as follows:

– Figure 30 (SEQ ID NO:21) shows an embodiment of a nucleic acid (partial mRNA) which includes a sequence which encodes a differentially expressed protein provided herein, rat BCQ5. –

Paragraph beginning at page 9, line 12, has been amended as follows:

– Figure 31 (SEQ ID NO:22) shows an embodiment of a partial open reading frame of a nucleic acid encoding rat BCQ5. –

Paragraph beginning at page 9, line 13, has been amended as follows:

– Figure 32 (SEQ ID NO:23) shows an embodiment of a nucleic acid (mRNA) which includes a sequence which encodes a breast cancer protein provided herein, BCH1. Start and stop codons are underlined. –

Paragraph beginning at page 9, line 15, has been amended as follows:

– Figure 33 (SEQ ID NO:24) shows an embodiment of an open reading frame of a nucleic acid encoding BCH1, wherein start and stop codons are underlined. –

Paragraph beginning at page 9, line 17, has been amended as follows:

– Figure 34 (SEQ ID NO:25) shows an embodiment of an amino acid sequence of BCH1. In a preferred embodiment, isolated BCH1 excludes the signal sequence, amino acids 1-19. –

Serial No.: 09/525,361

Filed: March 15, 2000

Paragraph beginning at page 9, line 19, has been amended as follows:

– Figure 35 shows the amino acid sequence of BCH1p1 (SEQ ID NO:26) and BCH1p2 (below; SEQ ID NO:27). –

Paragraph beginning at page 10, line 13, has been amended as follows:

– Figure 42 (SEQ ID NO:28) shows an embodiment of a nucleic acid (mRNA) which includes a sequence which encodes a breast cancer protein provided herein, BCN1. Start and stop codons are shaded, and Accession number AA419622 sequence is underlined. –

Paragraph beginning at page 10, line 16, has been amended as follows:

– Figure 43 (SEQ ID NO:29) shows an embodiment of an amino acid sequence of BCN1. A putative transmembrane domain is predicted to be at least at approximately positions 201-217 and 67-83. The protein may be a type IIIa membrane protein and may have additional transmembrane domains. –

Paragraph beginning at page 10, line 19, has been amended as follows:

– Figure 44 shows the amino acid sequence of BCN1p1 (SEQ ID NO:30) and BCN1p2 (SEQ ID NO:31). –

Paragraph beginning at page 10, line 22, has been amended as follows:

– Figures 46A-46D (SEQ ID NO:32) show an embodiment of a nucleic acid (mRNA) which includes a sequence which encodes a breast cancer protein provided herein, BCN2. Start and stop codons are shaded, and Accession number AA428090 sequence is underlined. –

Paragraph beginning at page 11, line 1, has been amended as follows:

– Figure 47 (SEQ ID NO:33) shows an embodiment of an amino acid sequence of BCN2. –

Paragraph beginning at page 11, line 4, has been amended as follows:

Serial No.: 09/525,361
Filed: March 15, 2000

– Figures 49A-49B (SEQ ID NO:34) show an embodiment of a nucleic acid (mRNA) which includes a sequence which encodes a breast cancer protein provided herein, BCN5. Start and stop codons are shaded, and Accession number R51309 sequence is underlined. –

Paragraph beginning at page 11, line 7, has been amended as follows:

– Figure 50 (SEQ ID NO:35) shows an embodiment of an amino:acid sequence of BCN5. A putative signal sequence is shaded and preferred sequence is underlined. –

Paragraph beginning at page 11, line 11, has been amended as follows:

– Figure 52 (SEQ ID NO:36) shows an embodiment of a nucleic acid (mRNA) which includes a sequence which encodes a breast cancer protein provided herein, BCO2. Start and stop codons are underlined. –

Paragraph beginning at page 11, line 13, has been amended as follows:

– Figure 53 (SEQ ID NO:37) shows an embodiment of an open reading frame of a nucleic acid encoding BCO2. –

Paragraph beginning at page 11, line 14, has been amended as follows:

– Figure 54 (SEQ ID NO:38) shows an embodiment of an amino acid sequence of BCO2. –

Paragraph beginning at page 11, line 15, has been amended as follows:

– Figure 55 shows an alignment of amino acids for human BCO2 (SEQ ID NO:39) above mouse BCO2 (SEQ ID NO:40). –

Paragraph beginning at page 11, line 18, has been amended as follows:

– Figure 57 (SEQ ID NO:41) shows an embodiment of a nucleic acid (mRNA) which includes a sequence which encodes a breast cancer protein provided herein, BCX2. Start and stop codons are underlined. –

Paragraph beginning at page 11, line 20, has been amended as follows:

Serial No.: 09/525,361

Filed: March 15, 2000

– Figure 58 (SEQ ID NO:42) shows an embodiment of an open reading frame of a nucleic acid encoding BCX2. –

Paragraph beginning at page 11, line 21, has been amended as follows:

–Figure 59 (SEQ ID NO:43) shows an embodiment of an amino acid sequence of BCX2.–

Paragraph beginning at page 12, line 5, has been amended as follows:

– Figure 62 (SEQ ID NO:44) shows an embodiment of a nucleic acid (mRNA) which includes a sequence which encodes a breast cancer protein provided herein, BCX3. Start and stop codons are underlined. –

Paragraph beginning at page 12, line 7, has been amended as follows:

– Figure 63 (SEQ ID NO:45) shows an embodiment of an open reading frame of a nucleic acid encoding BCX3. –

Paragraph beginning at page 12, line 8, has been amended as follows:

–Figure 64 (SEQ ID NO:46) shows an embodiment of an amino acid sequence of BCX3.–

Paragraph beginning at page 12, line 11, has been amended as follows:

– Figure 66 (SEQ ID NO:47) shows an embodiment of a nucleic acid (mRNA) which includes a sequence which encodes a breast cancer protein provided herein, BCA2. Start and stop codons are shaded, and Accession number D12485 sequence is underlined. –

Paragraph beginning at page 12, line 14, has been amended as follows:

–Figure 67 (SEQ ID NO:48) shows an embodiment of an amino acid sequence of BCA2.–

Paragraph beginning at page 12, line 15, has been amended as follows:

– Figure 68 (SEQ ID NO:49) shows an embodiment of a nucleic acid (mRNA) which includes a sequence which encodes a breast cancer protein provided herein, BCR2. Start and stop codons are shaded, and Accession number AA609773 sequence is shown underlined. –

Serial No.: 09/525,361

Filed: March 15, 2000

Paragraph beginning at page 12, line 18, has been amended as follows:

–Figure 69 (SEQ ID NO:50) shows an embodiment of an amino acid sequence of BCR2.–

Paragraph beginning at page 13, line 1, has been amended as follows:

– Figure 72 (SEQ ID NO:51) shows an embodiment of a nucleic acid which includes a sequence which encodes a breast cancer protein provided herein, BCJ7. –

Paragraph beginning at page 13, line 3, has been amended as follows:

– Figure 73 (SEQ ID NO:52) shows an embodiment of a nucleic acid which includes a sequence which encodes a breast cancer protein provided herein, BCY3. –

Paragraph beginning at page 19, line 15, has been amended as follows:

– The extracellular domains of transmembrane proteins are diverse; however, conserved motifs are found repeatedly among various extracellular domains. Conserved structure and/or functions have been ascribed to different extracellular motifs. For example, cytokine receptors are characterized by a cluster of cysteines and a WSXWS (W= tryptophan, S= serine, X=any amino acid) motif (SEQ ID NO:53). Immunoglobulin-like domains are highly conserved. Mucin-like domains may be involved in cell adhesion and leucine-rich repeats participate in protein-protein interactions. It is understood that the transmembrane domains may be removed to create soluble proteins herein. –

Paragraph beginning at page 51, line 13, has been amended as follows:

– In a preferred embodiment, as outlined above, screens may be done on individual genes and gene products (proteins). That is, having identified a particular differentially expressed gene as important in a particular state, screening of modulators of either the expression of the gene or the gene product itself can be done. The gene products of differentially expressed genes are sometimes referred to herein as “breast cancer proteins”, “breast cancer modulating proteins” “BCP” or a “BCMP”. In one embodiment, BCMP is termed BCH1. In one embodiment, BCH1 can be identified as described for identifying breast cancer proteins herein. In a preferred embodiment, BCH1 is depicted in Figure 34 (SEQ ID NO:25). The BCMP may be a fragment, or alternatively, be the full length protein to the fragment shown herein. Preferably, the BCMP is

Serial No.: 09/525,361

Filed: March 15, 2000

a fragment of approximately 14 to 24 amino acids long. More preferably the fragment is a soluble fragment. –

On page 65, immediately preceding the claims, the enclosed text entitled "SEQUENCE LISTING" was inserted into the text.

IN THE CLAIMS:

Claim 11 has been amended as follows:

– 11. The antibody of Claim 10 wherein said fragment is BCH1p1 (SEQ ID NO:26) or BCH1p2 (SEQ ID NO:27). –

Claim 19 has been amended as follows:

– 19. The method of Claim 16 wherein said fragment is selected from the group consisting of BCH1p1 (SEQ ID NO:26) and BCH1p2 (SEQ ID NO:27). –

Claim 23 has been amended as follows:

– 23. A peptide consisting essentially of BCH1p1 (SEQ ID NO:26). –

Claim 15 has been amended as follows:

– 25. A peptide consisting essentially of BCH1p2 (SEQ ID NO:27). –